

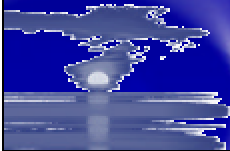


Michigan Water Utility Summit

Michigan Public Water System Tabletop Security Exercises

Sept. 26, 2005

Presented by Barry Johnson, P.E.



HOMELAND SECURITY ADVISORY SYSTEM

SEVERE

SEVERE RISK OF
TERRORIST ATTACKS

HIGH

HIGH RISK OF
TERRORIST ATTACKS

ELEVATED

SIGNIFICANT RISK OF
TERRORIST ATTACKS

GUARDED

GENERAL RISK OF
TERRORIST ATTACKS

LOW

LOW RISK OF
TERRORIST ATTACKS

Acronyms – Get to know the lingo

- ◆ ISAC
- ◆ ICS
- ◆ NIMS
- ◆ HAN
- ◆ LEIN
- ◆ TANS
- ◆ EOC
- ◆ LEPC
- ◆ SCBA
- ◆ PPE
- ◆ CERT
- ◆ CBRNE
- ◆ PEAS
- ◆ SCADA

Background Information

- ◆ **Homeland Security Strike Scenarios,
Three of the 12 identified in March 2005**
 - Detonation of a nuclear device in a major city
 - Release of Sarin nerve agent in office buildings
 - Blowing up a chlorine tank

Ann Arbor News, 3/17/05

AWWA Water Security Threats

Intentional
Contamination

Security Breach

Cyber Security
Breach

Physical Attack

Interdependency

AWWA, Security Guidance for Water Utilities

Water Supply Incidents

- ◆ 1995 *Shigella sonnei* in groundwater, 82 ill
(March 22, 1996 CDC MMWR)
- ◆ 9/11/01 - 12/02, 108 unauthorized intrusions
to potable water systems
(AWWA Journal, July 2005)
- ◆ 1927-9/11/01 129 reported unauthorized
intrusions
(AWWA Journal, July 2005)

2005 Incidents

- ◆ Railroad accident, chlorine gas tank leak, 8 killed, Jan. 2005, South Carolina
- ◆ Contaminated petroleum-based product at plant introduced into water system, Pa. 6/6/05 Do not use notice
- ◆ Locks tampered on 18 foot tank, Montana, 6/11/05, Drinking water advisory
- ◆ “PCB Contaminated” written on well pipes. Well closed, nothing in water, 7/7/05, Elk, Ca.

Introduction

- ◆ MDEQ contract/Homeland Security/CIP
- ◆ February to July 2005, 30 Tabletop Exercises were conducted.
- ◆ Just over 400 attended.
- ◆ Fire, Police, Utility personal and others attended.
- ◆ General format for the exercises.

Purpose of Table Top Exercises

- ◆ **Test how public officials and water suppliers work together in a water security incident**
- ◆ **Determine methods for the recovery and remediation of a contaminated water system**

Benefits of the Table Top Exercises

- ◆ **Provided face to face with Fire, Police, MDEQ, and utility personnel**
- ◆ **Let utilities know they are not alone when an incident occurs**
- ◆ **Identified other resources available**
- ◆ **Provided heightened awareness of terrorists acts**

Scenarios

1. February 21, 8 a.m.

- The Township Fire Department responded to a call from a school about an explosion near the school.
- The initial report from the scene was the explosion was centered at the Township water treatment plant.
- All electric lines to the plant have been destroyed and the building has been leveled.
- There is a strong smell of chlorine in the air.

Scenarios (cont.)

2. A threat is called into the 911 dispatcher.

- The Anti-Sprawl Fanatics were going to stop growth in the township. Call received April 22 at 11 p.m.
- At 11:30 p.m. an alert neighbor calls 911 and reports that a strange looking person was at the 1.5 million gallon elevated tank.
- What would you do?

Scenarios (cont.)

3. A woman who runs a day care center calls the police that there is a lawn care company filling their truck tank from a hydrant near the daycare center.

- There is no one in the truck.
- A yellow liquid is on the ground around the hydrant.
- Report is received on a Wednesday morning at 8 a.m.

Table Top Discussion

- ◆ Much of the discussion focused on:
 - Testing for unknowns in the water system
 - Communication
 - Public notification

Testing For Unknowns

- ◆ Haz-Mat Units
- ◆ Private Labs
- ◆ 51st Civil Support Unit, or Selfridge Unit
- ◆ EPA
- ◆ Risks in sampling, testing

Unusual Signs to Look For

- ◆ First responders sick or not moving
- ◆ General evidence of contamination,
- ◆ Discarded PPE
- ◆ Discarded equipment
- ◆ Empty containers unusual for the site, unexplained or unusual residual material around the site,.
- ◆ Unexplained or unusual water conditions, such as oily films, foaming, or discoloration.

Signs specific to the presence of chemical contamination include:

- ◆ Evidence of dead/dying/sick animals
- ◆ Numerous dead insects in a localized area
- ◆ Isolated areas at the site where vegetation is dead, discolored, or withered
- ◆ Numerous oily liquid droplets on surfaces or an oily film on the water surface
- ◆ Unusual odors
- ◆ A low-lying fog that is not explained by current weather conditions

Radiological Contamination

- ◆ The lack of obvious signs of radiological contamination underscores the importance of including field testing for elevated levels of radioactivity.

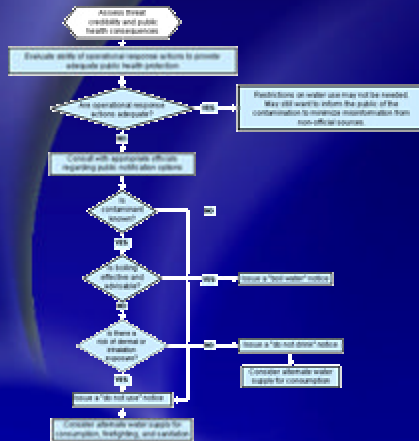
ER Communication

- ◆ Website
- ◆ Faxes
- ◆ 800 megahertz radios
- ◆ Cell phones
- ◆ Land Lines

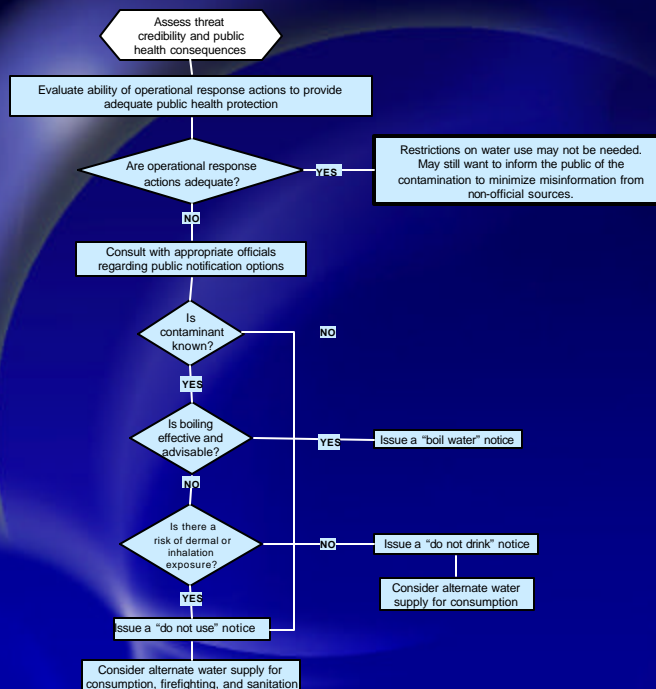
Public Notification

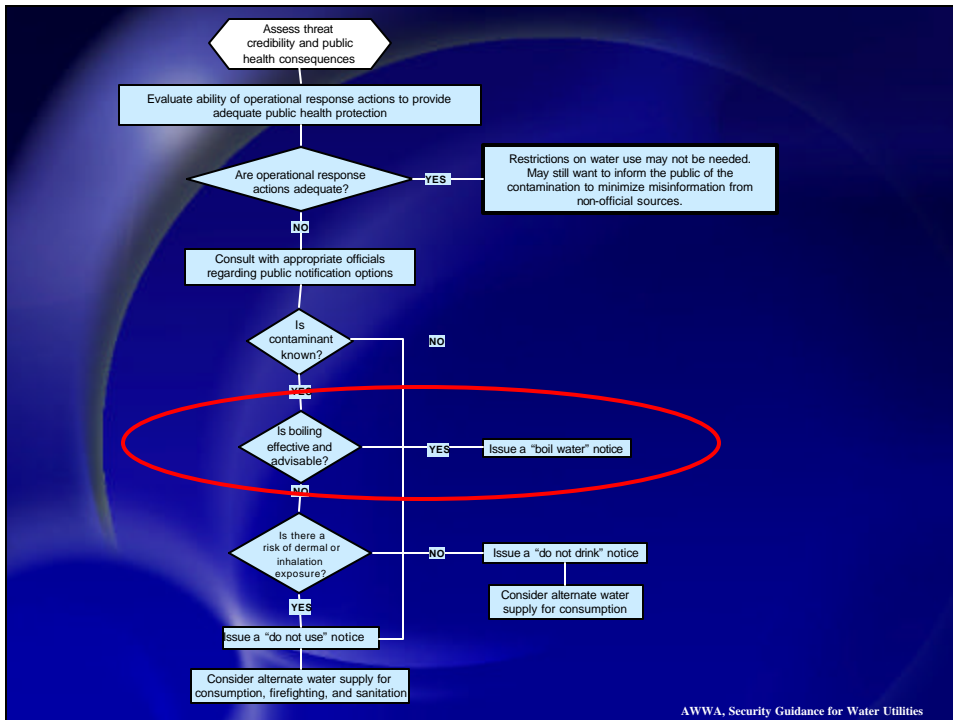
- ◆ First Call and other systems
- ◆ Reverse 911
- ◆ Cable TV, Radio
- ◆ CERT, Neighborhood, City Watch Groups

Decision Tree for Public Notification

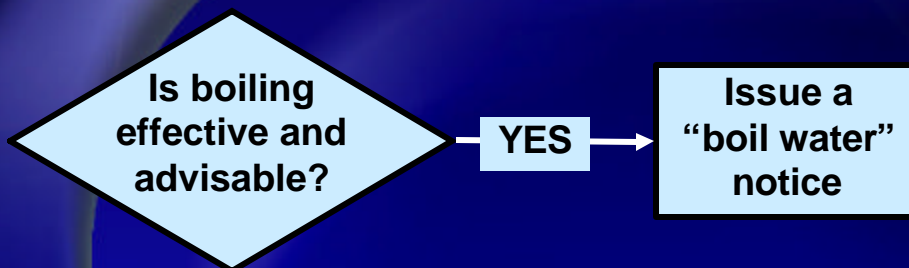


**From: EPA
Response Protocol
Toolbox**

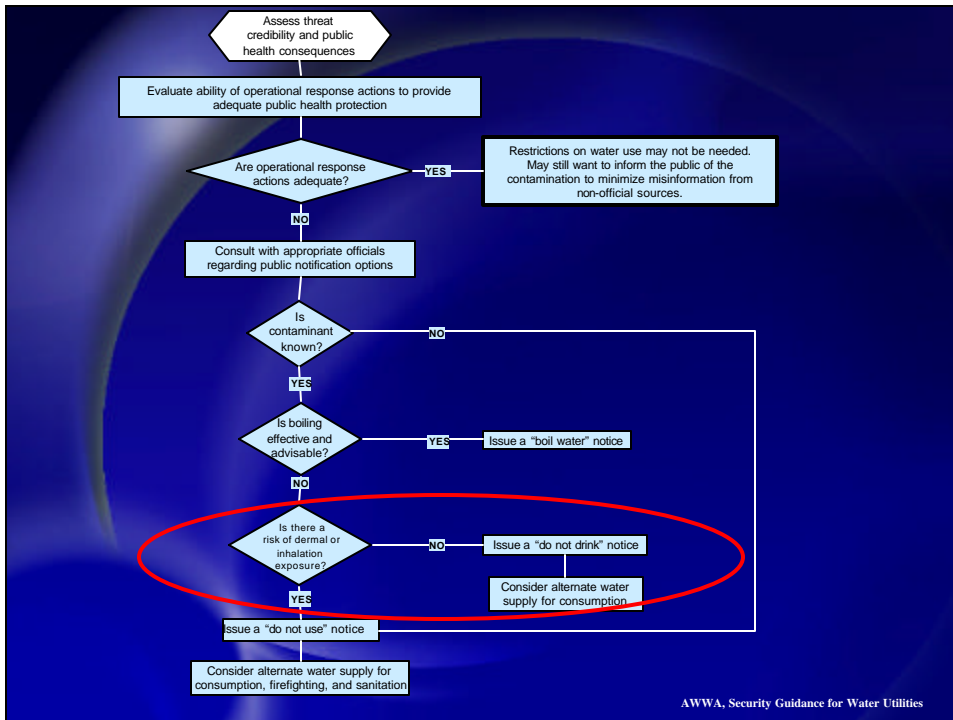




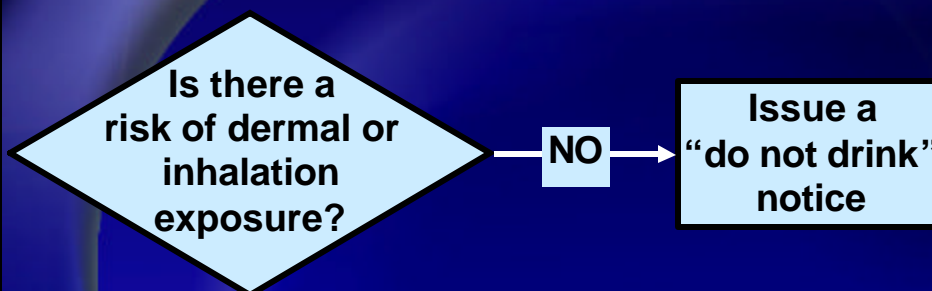
Boil Water Notice



WARNING
BOIL YOUR WATER BEFORE USING
 [The _____ Water System] water is contaminated
 with [i.e. fecal coliform/*E. coli*]

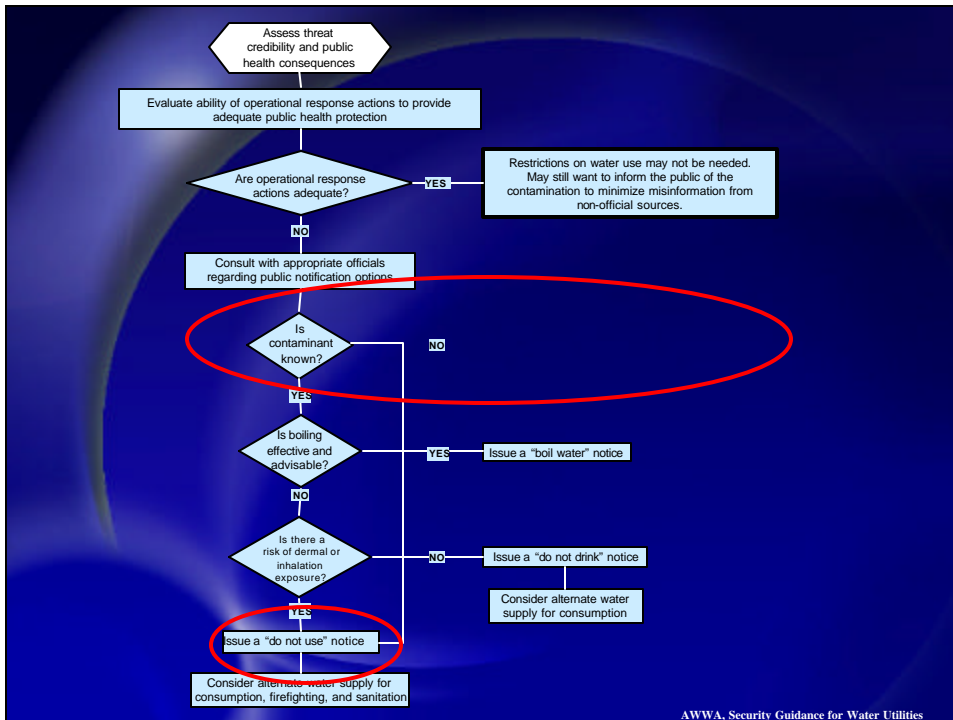


Do Not Drink Notice

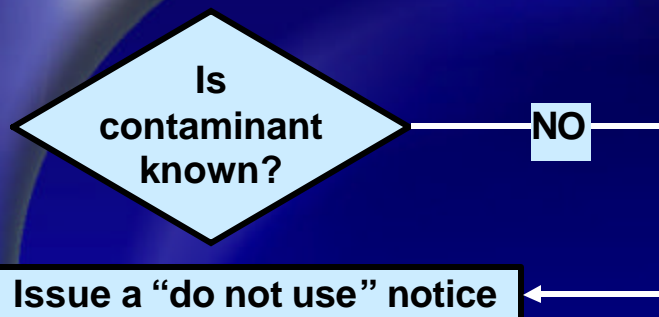


WARNING

DO NOT DRINK THE WATER _____ found in the [City of _____] water supply on [October 10th]
Bottled water can be obtained at _____ 24 hours per day.



Do Not Use Notice



WARNING
DO NOT USE THE WATER
 [i.e. Parathion] found in the _____ Water
 System water supply on [November 14th]
 Bottled water can be obtained at ____ 24 hours per day.

Participants Comments at Exercises

- ◆ Have one point of information – police then EOC
- ◆ Does the public know what “Shelter in place means”?
- ◆ WMD = Weapons of mass destruction or weapons of mass disruption
- ◆ Think, exposure prevention, containment and isolation
- ◆ Notify adjacent utilities if you have an incident

Participants Comments (cont.)

- ◆ Drinking water notices on MDEQ website, www.michigan.gov/deq/water
- ◆ Storage tank water can be used to backflush the distribution system
- ◆ Closing large valves – 900 to 3000 turns
- ◆ “Rush to flush” may make things worse
- ◆ Where do you dispose of contaminated water/material?
- ◆ Cross training of employees can keep operations going

Resources

- ◆ AWWA Security Guidance for Water Utilities
- ◆ www.bt.cdc.gov bioterrorism information
- ◆ AWWA Journal articles
- ◆ *Potential Contamination Due to Cross-Connections and Backflow and the Associated Health Risks*, EPA, Aug. 13, 2002
- ◆ *National Drinking Water Advisory Council, Water Security Working Group, Findings*, May 18, 2005

Resources (cont.)

- ◆ *Water System Security Guidance Document*, 2002 Water System Security Subcommittee, Michigan Section AWWA
- ◆ *Preparing for the Unexpected: Security for Small Water Systems*, National Environmental Training Center, W. Virginia Univ.